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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/633,614

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Motohide Takeichi

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

06/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/633,614	Applicant(s) TAKEICHI ET AL.	
	Examiner Victor S. Chang	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. In view of the Appeal Brief filed on 4/4/2008, PROSECUTION IS HEREBY REOPENED. A new ground of rejection over new matter is set forth below. In response to arguments, the remaining grounds of rejections are maintained and updated.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

2. Applicants' amendments and remarks filed in the Appeal Brief have been entered.

Claims 1 and 6 are active.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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4. Rejections not maintained are withdrawn.

Claim Objections

5. Claim 1 is objected to because of the following informalities:

In line 1, the term “anisotropically” is misspelled as “anisotropic” [see specification throughout].

Appropriate correction is required in the next reply.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

More particular, as stated in the Interview Summary mailed 5/22/2008, the claimed range of S in claim 1, in particular the amended lower point $S > 11$ in Equation (1), is new matter, because a support cannot be found in the original specification.

Rejections Based on Prior Art

8. Claims 1 and 6 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shiobara et al. [US 6001901].

Shiobara relates to an epoxy resin composition suitable as an encapsulant for a matrix frame [col. 1, ll. 3-4]. It is known that epoxy resin compositions are used as encapsulants (or molding compounds for semiconductor devices) for advanced thin packages, and the resin is loaded with large amounts of submicron fillers having a mean particle size of less than 1 μm , desirably less than 0.5 μm , for achieving both improved loading and minimized moisture pick-up. However, the fine filler has a very large specific surface area, as compared with conventional fillers, and results in an extremely increased viscosity which makes it difficult to mold the compositions [col. 1, ll. 7-18]. Shiobara teaches that for the purpose of providing an epoxy resin composition having an increased filler loading and a reduced viscosity, a filler loading of about 80 to 85% by weight and a viscosity of about 100 to 300 poise at 175°C are achievable by blending a filler containing about 5 to 15% by weight of a spherical filler fraction having a submicron particle size of about 0.5 μm [col. 1, ll. 21-25]. More particularly, Shiobara teaches an epoxy resin composition comprising an epoxy resin and a curing agent (thermosetting resin), and a conventional inorganic filler, which has a mean particle size of 4 - 30 μm , and a specific surface area of 1.5 - 6 m^2/g . A particle size distribution that fine particles having a particle size of at most 3 μm , account for 10 to 40% by weight of the filler. The maximum particle size is less than 100 μm [col. 4, ll. 62 through col. 5, ll. 2]. Further, a fraction of the filler is ultrafine silica is blended to achieve closest packing of the filler and imparting thixotropy

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flow control to the composition. The fraction of the ultrafine silica filler has a mean particle size of 0.05 to 0.3 μm , and a specific surface area of 10 - 40 m^2/g [col. 5, lines 21-38].

For claims 1 and 6, Shiobara's ultrafine silica particle anticipates the specific surface area of Equation (1). Shiobara is silent about the size relations expressed in Equations (2)-(4).

However, workable filler blends of various particle sizes satisfying the claimed size relations are deemed to be either anticipated, or obvious routine optimizations to one of ordinary skill in the art, motivated by the desire to obtain encapsulants for advanced thin packages. Similarly, since Shiobara teaches a workable range of silica particles by weight, which infers that the amount of the silica particles is result effective, and the fillers minimizes moisture pick-up, a workable volume% of silica particles and amount of moisture absorption are deemed to be either anticipated, or obviously provided by practicing the invention of prior art for the same end use as the claimed invention. Finally, regarding the term "anisotropic conductive", it is interpreted as "anisotropically conductive", as stated in the original specification throughout, and deemed to be an inherent property of the same chemistry of the heat conductive adhesive.

Response to Argument

9. Since Shiobara '774 has been withdrawn, applicants' arguments directed to Shiobara '774 are responded with relevant teachings of Shiobara '901, as set forth below.

Applicants argue at Appeal Brief pages 11-13 that

"Shiobara '774 fails to disclose a specific surface area of its inorganic filler as from 11 to 17 m^2/g ; fails to teach or suggest an anisotropic conductive adhesive material having the claimed coefficient of moisture absorption that, in a 85% relative humidity, 85°C atmosphere, is 1.5 wt % or less; and fails to teach or suggest employing inorganic fillers in the amount of 35 to 60 percent by volume."

However, applicants' arguments are moot in view of the new grounds of rejections set forth above.

Applicants argue at page 14 that

“the Examiner has not proffered any evidence that either reference, or the art itself, recognizes the claimed coefficient of moisture absorption as a result-effective variable.”

However, since Shiobara expressly teaches that the filler minimizes moisture pick-up, it is unseen that the amount of the filler is not a result effective variable to one of ordinary skill in the art to optimize the coefficient of moisture absorption.

Applicants argue at page 15 that

“The Examiner also concedes that Shiobara '901 is additionally silent with respect to the percent volume of the filler. However, Applicants submit that at least because the Examiner fails to appreciate the advantage of increased reliability imparted by the claimed percent volume of filler, such a feature cannot be said to be a simple routine optimization in the art.”

However, since Shiobara teaches a workable range of silica particles by weight, which infers that the amount of the silica particles is result effective, a workable volume% of silica particles is deemed to be either anticipated, or obviously provided by practicing the invention of prior art for the same end use as the claimed invention.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794